Machine accessibility of Open Access scientific publications from publisher systems via ResourceSync

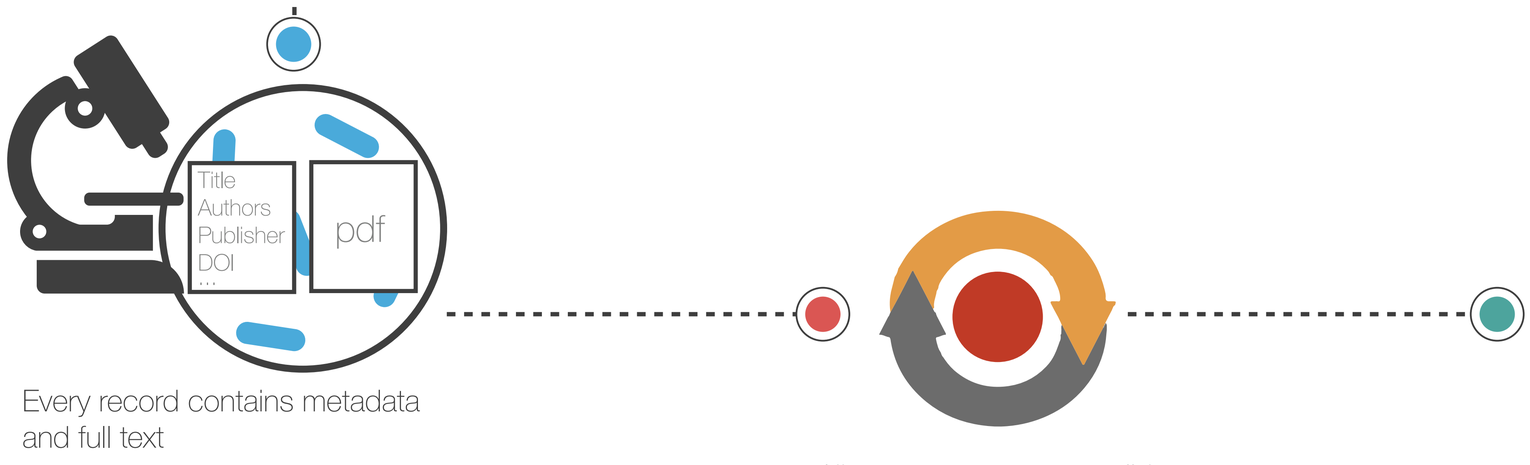
Petr Knoth, Lucas Anastasiou, Giorgio Basile, Samuel Pearce and Nancy Pontika. CORE, United Kingdom

The number of scholarly research papers being published is gradually growing; it is estimated that approximately 1.5 million of research papers are produced each year and about 4% of them are offered via Open Access journals[1]. The high volume of scientific papers introduces new opportunities for content discoverability and facilitates a growth in various scientific disciplines via text and data mining (TDM)[2]. One of the greatest barriers to TDM is caused by the difficulty of programmatically accessing open access content from a wide range of publishers[3].

CORE has created a publisher connector, which harvests the open access scientific papers from publishers and exposes the content in a standardised API. Our contribution can be summarised as:

a) creating a seamless layer for accessing content from across publishers,
b) offering a generic integrated access point to millions of scientific papers, which will be constantly updated and
c) providing the first large-scale and highly scalable ResourceSync server deployment.

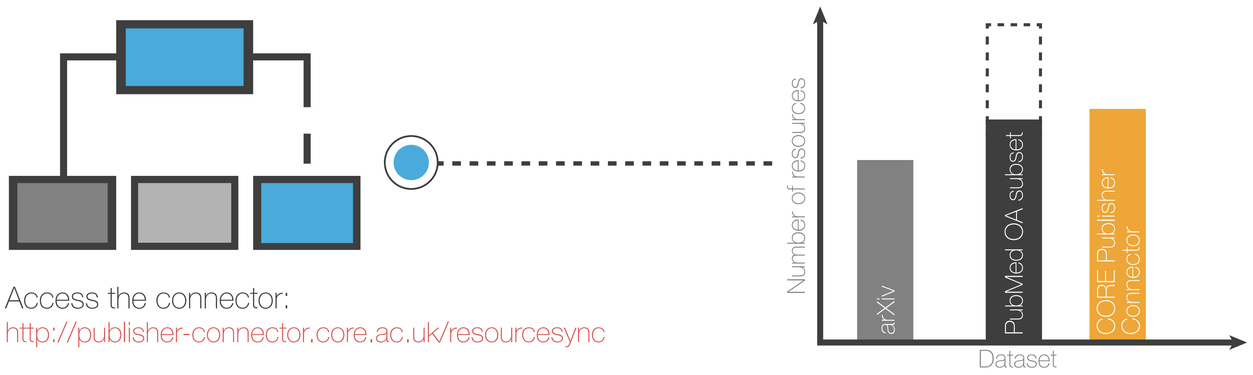
This is the first service to provide a harmonised access layer over non-standardised publisher APIs for retrieving scholarly content as well as the first implementation of ResourceSync scaling to millions of documents with the potential for fast real-time updates. With the connector we have made available over 1.5 million Gold and Hybrid Gold Open Access articles for text mining that used to be locked on publisher platforms.



This work has been conducted within the OpenMinTeD[4] project by the team developing the CORE aggregator[5,6]. In addition to the connector, we also offer an expertise directory[7], where we provide the following information per publisher:

- Publisher API
- Harvesting approach
- Publisher's available information
- Features table
- Recommendations

openMINTED CORE



The largest datasets for text mining Gold Open Access
- arXiv: 1,261,533
- PubMed Central (OA subset):1,582,188
- CORE Publisher Connector:1,660,625

For the largest collection of Green & Gold Open Access content, look at https://core.ac.uk/services#dataset

References
[1] Björk, B.C., Roos, A., Lauri, M. (2009). Scientific journal publishing: yearly volume and open access availability. *Information Research*, 14, 1.
[2] European Commission. (2014). *Standardisation in the area of innovation and technological development, notably in the field of Text and Data Mining: Report from the Expert Group*. Brussels: European Commission.
[3] Knoth, P., Pontika, N. (2016). Aggregating Research Papers from Publishers' Systems to Support Text and Data Mining: Deliberate Lack of Interoperability or Not? In: *INTEROP2016* (Eckart de Castilho, Richard; Ananiadou, Sophia; Margoni, Thomas; Peters, Wim and Piperidis, Stelios eds.), 23 May 2016.
[4] OpenMinTeD (2017). Retrieved from http://openminted.eu/
[5] CORE (2017). Retrieved from https://core.ac.uk/
[6] Knoth, P. and Zdrahal, Z. (2012). CORE: Three Access Levels to Underpin Open Access, *D-Lib Magazine*, 18, 11-12.
[7] Anastasiou, L., Pearce, S., Pontika, N., Knoth, P. (2017). OpenMinTeD Publisher Connector Harvester. *Github*. https://github.com/openminted/omtd-publisher-connector-harvester